Applicant : Tai et al. Attorney's Docket No.: 12406-171002 / P2002,0581 US

E1

Serial No.: 10/705,795

Filed: November 6, 2003

Page : 2 of 7

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-23. (Canceled)

24. (Previously Presented) A light-emitting device comprising:
a plurality of electrode layers, including an anode layer and a cathode layer;
an electro-luminescent organic material disposed between the anode and cathode layers; and

a poly-siloxane insulating structure defining apertures, wherein the electroluminescent organic material is within the apertures, the poly-siloxane structure has a height greater than a thickness of the electro-luminescent organic material, the poly-siloxane structure surrounds the electro-luminescent organic material and the apertures correspond to a plurality of active, electro-luminescent pixels.

25-26. (Canceled)

- 27. (Previously Presented) The device of claim 24 wherein at least one electrode layer is configured to independently address at least one aperture of the poly-siloxane insulating structure as an active, electro-luminescent pixel, and wherein the at least one electrode layer is coupled to a corresponding transistor.
- 28. (Previously Presented) The device of claim 24 wherein the poly-siloxane insulating structure forms a bank structure that insulates the plurality of active, electroluminescent pixels from each other.

Applicant: Tai et al. Attorney's Docket No.: 12406-171002 / P2002,0581 US E1

Serial No.: 10/705,795

Filed : November 6, 2003

Page : 3 of 7

(Previously Presented) The device of claim 24 further comprising one or more 29. insulating strips on the poly-siloxane insulating structure, and wherein at least one insulating strip comprises an overhanging portion or a base portion or both.

- 30. (Previously Presented) The device of claim 29 wherein the at least one insulating strip comprises poly-siloxane material in one or both of the overhanging portion and the base portion.
- 31. (Previously Presented) A method of fabricating a light-emitting device, the method comprising:

forming a first electrode layer on a substrate;

forming on the first electrode layer a poly-siloxane bank structure having apertures;

depositing from solution using wet-chemical techniques one or more organic layers into the apertures of the poly-siloxane bank structure, wherein at least one of the organic layers is electro-luminescent, the poly-siloxane bank structure has a height greater than a thickness of the electro-luminescent organic layers and the poly-siloxane bank structure surrounds the electro-luminescent organic material; and

forming a second electrode layer such that the one or more organic layers deposited into the apertures are disposed between the first and second electrode layers.

- 32. (Previously Presented) The method of claim 31 wherein the wet-chemical techniques comprise spin-casting, dip-coating, screen printing, flexo printing, or ink-jet printing.
 - 33. (Canceled)
- (Previously Presented) The method of claim 31 wherein depositing one or more 34. organic layers comprises depositing an electro-luminescent organic layer.

Applicant: Tai et al. Attorney's Docket No.: 12406-171002 / P2002,0581 US E1

Serial No.: 10/705,795

Filed : November 6, 2003

Page : 4 of 7

35. (Previously Presented) The method of claim 31 wherein forming on the first electrode layer a poly-siloxane bank structure includes patterning the poly-siloxane bank structure to separate the light-emitting device into a plurality of pixels.

- 36. (Previously Presented) The method of claim 31 wherein the poly-siloxane bank structure is formed before the one or more organic layers are deposited.
- 37. (Previously Presented) The method of claim 31 further comprising forming one or more insulating strips on the poly-siloxane bank structure.
- 38. (Previously Presented) The method of claim 37 wherein the one or more insulating strips are formed on the poly-siloxane bank structure between the apertures.
- 39. (Currently Amended) The method of claim 38 wherein the at least one insulating strip comprises one or more insulating strips comprise an overhanging portion or a base portion or both.
- (Currently Amended) The method of claim 39 wherein the at least one insulating 40. strip comprises one or more insulating strips comprise poly-siloxane in one or both of the overhanging portion and the base portion.
- 41. (Previously Presented) An organic light-emitting device (OLED) comprising: a plurality of light-emitting elements, each light-emitting element comprising an electro-luminescent organic layer disposed between electrodes; and

at least one structure comprising poly-siloxane material, wherein the structure includes apertures and is configured to separate the plurality of light-emitting elements,

wherein, prior to drying, the organic layer is initially a solution that includes an organic material and a solvent, the poly-siloxane structure is non-wetting to the organic material in an aperture, the poly-siloxane structure has a curing temperature below 250°C, the polyApplicant : Tai et al. Attorney's Docket No.: 12406-171002 / P2002,0581 US

Serial No.: 10/705,795

Filed: November 6, 2003

Page : 5 of 7

siloxane structure has a height greater than a thickness of the organic material and the polysiloxane structure surrounds the electro-luminescent organic material.

42-43. (Canceled)

- 44. (Previously Presented) The OLED of claim 41 wherein the at least one structure comprises a poly-siloxane bank structure configured to separate the plurality of light-emitting elements from each other.
- 45. (Previously Presented) The OLED of claim 44 wherein the poly-siloxane bank structure includes apertures into which each of the light-emitting elements are arranged.
- 46. (Previously Presented) The OLED of claim 44 wherein the poly-siloxane bank structure physically and electrically insulates the light-emitting elements from each other.
- 47. (Previously Presented) The OLED of claim 41 further comprising one or more insulating strips on the at least one structure.
- 48. (Previously Presented) The OLED of claim 47 wherein the one or more insulating strips comprise an overhanging portion or a base portion or both.
- 49. (Previously Presented) The OLED of claim 48 wherein the one or more insulating strips comprise poly-siloxane material in one or both of the overhanging portion and the base portion.
- 50. (Previously Presented) The method of claim 31 wherein forming the polysiloxane bank structure includes applying a photo-patternable polysiloxane solution to the first electrode and exposing the polysiloxane solution to light and developer solution.

Applicant: Tai et al. Attorney's Docket No.: 12406-171002 / P2002,0581 US E1

Serial No.: 10/705,795

Filed : November 6, 2003

Page : 6 of 7

51. (Previously Presented) The method of claim 31, wherein the poly-siloxane insulating structure is non-wetted by the solution.

- 52. (Previously Presented) The method of claim 31, further comprising drying the solution to form the organic layers.
- 53. (Previously Presented) A method of fabricating a light-emitting device, the method comprising:

forming a first electrode layer on a substrate;

applying a photo-patternable poly-siloxane solution to the first electrode and exposing the poly-siloxane solution to light and developer solution to form a poly-siloxane bank structure having apertures;

depositing from solution using wet-chemical techniques one or more organic layers into the apertures of the poly-siloxane bank structure, wherein at least one of the organic layers is electro-luminescent; and

forming a second electrode layer such that the one or more organic layers deposited into the apertures are disposed between the first and second electrode layers.